

## CLAIMS

1. A piece of radio base station apparatus,  
comprising

5 an interference canceller which has a plurality of  
sets of a processing unit including:

despreading means in which despreading signals for  
each channel are obtained by despreading, with a spreading  
code, of signals of a plurality of channels, spreading  
10 modulation of which is performed with said spreading code  
at the side of a communication terminal;

likelihood calculation means for calculation of the  
likelihoods of symbols, which are obtained by use of said  
despreading signals, for each channel;

15 ranking means for ranking according to the  
likelihoods of each symbol; and

replica signal generation means for generation of  
replica signals according to said ranking results, and

subtraction means for cancellation of replica  
20 signals generated in said processing unit from input  
signals into said processing unit, wherein

replica signals for a plurality of symbols are  
generated and canceled from the input signals at the same  
time by said processing unit and said subtraction section.

25 2. A piece of radio base station apparatus,  
comprising an interference canceller which is provided  
with a plurality of subsets including:

despreading means in which despreading signals for each channel are obtained by despreading, with a spreading code, of signals of a plurality of channels, spreading modulation of which is performed with said spreading code  
 5 at the side of a communication terminal;

likelihood calculation means for calculation of the likelihoods for symbols, which are obtained by use of said despreading signals, for each channel;

ranking means for ranking according to the  
 10 likelihoods of each symbol; and

replica signal generation means for generation of replica signals according to said ranking results, wherein

each subset, independently from each other,  
 15 performs said ranking processing and said generation of replica signals.

3. A piece of radio base station apparatus according to claim 2, comprising

channel allocation control means for control of  
 20 allocation of channels based on information reported from each subset so that the relations between the ranking order and likelihood are almost uniform among subsets.

4. A piece of radio base station apparatus, comprising:

25 an interference canceller which is provided with a plurality of subsets including:

despreading means in which despreading signals for

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each channel are obtained by despreadng, with a spreading code, of signals of a plurality of channels, spreading modulation of which is performed with said spreading code at the side of a communication terminal;

5        likelihood calculation means for calculation of the likelihoods for symbols, which are obtained by use of said despreadng signals, for each channel;

10        class decision means for decision of the presence of replica signals by comparison between the likelihoods of each symbol and a threshold value;

15        replica signal generation means for generation of replica signals according to said class decision results, wherein each subset, independently from each other, performs said class decision processing and said generation of replica signals.

5.    A piece of radio base station apparatus according to claim 4, comprising:

20        threshold control means for control of threshold values based on information on the current slot or information on slots just before the current slot.

6.    A piece of communication terminal apparatus performing radio communication with a piece of radio base station apparatus, wherein said radio base station apparatus comprises

25        an interference canceller which has a plurality of sets of

a processing unit including:

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despreading means in which despreading signals for each channel are obtained by despreading, with a spreading code, of signals of a plurality of channels, spreading modulation of which is performed with said spreading code  
5 at the side of a communication terminal;

likelihood calculation means for calculation of the likelihoods of symbols, which are obtained by use of said despreading signals, for each channel;

ranking means for ranking according to the  
10 likelihoods of each symbol; and

replica signal generation means for generation of replica signals according to said ranking results, and

subtraction means for cancellation of replica signals generated in said processing unit from input  
15 signals into said processing unit, and

replica signals for a plurality of symbols are generated and canceled from the input signals at the same time by said processing unit and said subtraction section.

7. A radio communication method comprising the  
20 steps of:

despreading signals for each channel are obtained by despreading, with a spreading code, of signals of a plurality of channels, spreading modulation of which is performed with said spreading code at the side of the  
25 communication terminal;

calculating the likelihoods of symbols, which are obtained by use of said despreading signals, for each

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channel;

ranking according to the likelihoods of each symbol;

and

generating replica signals according to said  
5 ranking results, is performed every subset to which a  
plurality of channels are allotted, wherein

each subset, independently from each other,  
performs said ranking processing and said generation of  
replica signals.

10 8. A radio communication method comprising the  
steps of:

despreading signals for each channel are obtained  
by despreading, with a spreading code, of signals of a  
plurality of channels, spreading modulation of which is  
15 performed with said spreading code at the side of a  
communication terminal;

calculating the likelihoods of symbols, which are  
obtained by use of said despreading signals, for each  
channel;

20 deciding the presence of generated replica signals  
by comparison between the likelihoods of each symbol and  
a threshold value; and

generating replica signals according to said class  
decision results, is performed every subset to which a  
25 plurality of channels are allotted, wherein

each subset, independently from each other,  
performs said class decision processing and said

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generation of replica signals.

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